UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,109	04/14/2004	Dan Pellerin	60,568-034	7547

27305 7590 02/15/2007

HOWARD & HOWARD ATTORNEYS, P.C.
THE PINEHURST OFFICE CENTER, SUITE #101
39400 WOODWARD AVENUE
BLOOMFIELD HILLS, MI 48304-5151

EXAMINER	
JIMENEZ, MARC QUEMUEL	
ART UNIT	PAPER NUMBER
3726	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/824,109	PELLERIN ET AL.	
	Examiner	Art Unit	
	Marc Jimenez	3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 17-23,25,26,28-30,33-37,39-42,44-47,50 and 51 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 17-23,25,26,28-30,33-37,39-42,44-47,50 and 51 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 14 April 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 8-13-06,9-10-04.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. 20070205.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Request For Interference

1. The request for interference filed 6-23-05 is acknowledged. However, examination of this application has not been completed as required by 37 CFR 41.102(a). Consideration of a potential interference is premature. See MPEP § 2303.

Election/Restrictions

2. The restriction requirement filed 12-21-06 is herein withdrawn.

3. Examination of all pending claims appears below.

Specification

4. The amendment filed 6-23-05 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

"The location of the valve stem aperture relative to the identification or gauging station 24 is thus determined." is new matter. There is no support for determining the location of the valve stem aperture relative to the identification station or gauging station. Furthermore, there is no support of "gauging station". "gauging station" is different from an "identification station" because a gauging station performs some sort of measuring operation whereas an identification station does not perform any measuring.

"In other words, the central axis of the aperture 118 and a longitudinal axis of the valve stem are coaxially aligned with respect to one another prior to insertion of the valve stem through the aperture 118.". There is no support for "coaxial" alignment in the original disclosure. Although it could very well be, that during assembly with the robotic manipulator, the alignment could be coaxial or not coaxial. However, applicant has not specifically described any coaxial alignment and there is no evidence that it could be inherent to have coaxial alignment. Therefore, this feature is considered new matter added to the disclosure.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. **Claims 17-23, 25, 26, 28-30, 33-37, 39, 40, 42, 44-47, 50 and 51** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims include subject matter that was not part of the original disclosure.

In Claims 17, 33, 44 and 50, there is no support for the following limitations in the original

disclosure:

(1) "determining a location of the aperture relative to a gauging station". This is a specific limitation and cannot be considered an inherent step in the instant application. Furthermore, "gauging station" is different from an "identification station" because a gauging station performs some sort of measuring operation whereas an identification station does not perform any measuring.

(2) "coaxially aligning a central axis of the aperture and a longitudinal axis of the valve stem with respect to one another prior to insertion of the valve stem through the aperture". There is no support for "coaxially aligning" prior to insertion of the valve stem through the aperture in the original disclosure.

(3) "moving the valve stem relative to the rim along a programmable path of travel during the coaxially aligning step and along the aligned axes to insert the valve stem through the aperture, the path of travel defined with a programmable robotic manipulator having an arm capable of compound, multi-axial movement and having a plurality of programmed paths corresponding to a plurality of different size wheel rim and valve stem combinations to be assembled.". Applicant's invention has no mention of any programming being performed, much less the specific programming now claimed.

In Claim 19, there is no support for the following limitations in the original disclosure:

(1) "gauging station". There is no support for gauging station as noted above.

(2) "selectively moving" the valve stem "in response to the determining step"

In Claim 21, there is no support for the following limitations in the original disclosure:

(1) "rotating the optical sensor about the rim".

(2) "stopping rotation of the optical sensor about the rim when the optical sensor is directed at the aperture".

In Claims 25 and 39, there is no support for the following limitations in the original disclosure:

(1) "conveying valve stems to the delivery station in a serial fashion with conveying means". This is new matter because figure 1 shows valve stem stations **92,100** without any conveying means that deliver in serial fashion.

In Claim 28, there is no support for the following limitations in the original disclosure:

(1) "moving along the path of travel in response to computer-controlled signals". There is no support for any programming of a programmable path of travel in the original disclosure, therefore there is no support for moving along the path of travel in response to computer-controlled signals.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. **Claims 17, 18, 20, 22, 26, 28-30, 33, 34, 36, 40, 42 and 44-46** are rejected under 35 U.S.C. 102(b) as anticipated by Doan et al. (US5940960) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Doan et al. in view of Lawson et al. (US6481083).

Doan et al. teach determining a location of an aperture relative to a gauging station **12**, coaxially aligning a central axis of the aperture and a longitudinal axis of the valve stem with respect to one another prior to insertion of the valve stem through the aperture (col. 7, lines 10-23), and moving the valve stem relative to the rim along a programmable path of travel (col. 8, lines 13-21, "programmable logic controller") during the coaxially aligning step and along the aligned axes to insert the valve stem through the aperture, the path of travel defined with a programmable robotic manipulator **54** having an arm capable of compound, multi-axial movement (see paragraph bridging columns 6 and 7) and having a plurality of programmed paths corresponding to a plurality of different size wheel rim and valve stem combinations to be assembled. Note the machine vision system **66**. Note that a rim is identified as one of a plurality of different types of rims (col. 2, lines 19-20).

It is noted that although Doan et al. discloses that "..., the valve stem **may** not be perfectly aligned with the center of the valve stem opening depending upon the consistency of

the wheels.". It is noted that it is possible that the valve stem **is** perfectly aligned if the "consistency" of the wheels are accurate. Therefore, it is inherent in Doan et al. that the longitudinal axis of the valve stem is coaxially aligned with a central axis of the aperture.

It is noted that Doan et al. is considered to teach a programmable robotic manipulator arm **54** capable of compound, multi-axial movement. Doan et al. teach a cradle **136** that rotates with respect to a first axis and a first support member **138** rotatable about a second axis. The robotic manipulator also has actuators **142** for further axial movement. Therefore there is multi-axial movement in Doan et al.

If applicant shows convincing evidence that it is not inherent in Doan et al. to have the step of coaxially aligning the central axis of the aperture and a longitudinal axis of the valve stem with respect to one another prior to insertion of the valve stem through the aperture and that the manipulator is not a robotic manipulator capable of programmable control.

It is noted that Lawson et al. clearly teach coaxially aligning a central axis of the aperture and a longitudinal axis of the valve stem with respect to one another prior to insertion of the valve stem through the aperture and using a robot having multi-axial movement and having a plurality of programmable paths (see entire claim 1 in column 8).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Doan et al. with coaxially aligning a central axis of the aperture and a longitudinal axis of the valve stem with respect to one another prior to insertion of the valve stem through the aperture and using a robot having multi-axial movement and having a plurality of programmable paths, in light of the teachings of Lawson et al., in order

to more accurately align the valve stem with respect to the aperture. Robotic manipulators allow accurate, programmable assembly methods.

It is inherent that a nut is attached to the valve stem of Doan et al. because they are typically used to hold the valve stem in place. Alternatively, Lawson et al. teach attaching a nut (see claim 8 in column 8). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Doan et al. with attaching a nut, in light of the teachings of Lawson et al., in order to securely hold the valve stem in place.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. **Claims 19, 23, 25, 35, 37, 39, 47, 50 and 51** are rejected under 35 U.S.C. 103(a) as being unpatentable over Doan et al. in view of Lawson et al.

Doan et al. teach the invention cited with the exception of having a plurality of valve stem delivery stations (in serial fashion).

Lawson et al. teach a plurality of valve stem delivery stations **54** having different valve stems (in serial fashion).

It would have been obvious to one of ordinary skill in the art, at the time of the invention,

to have provided the invention of Doan et al. with a plurality of valve stem delivery stations, in light of the teachings of Lawson et al., in order to provide different types of valve stems.

Doan et al. do not specifically teach a nut runner mounted on a robotic manipulator.

Lawson et al. teach a nut runner mounted on a robotic manipulator (see claim 9 in column 8). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Doan et al. with a nut runner mounted on a robotic manipulator, in light of the teachings of Lawson et al., in order to automatically apply the nut to the valve stem.

11. **Claims 17-22, 23, 25, 26, 28-30, 33-37, 39, 40, 42, 44-47 and 50** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lawson et al. in view of Doan et al.

Lawson et al. teach each of these features in column 8, lines 9-25: determining a location of an aperture relative to a gauging station, coaxially aligning a central axis of the aperture and a longitudinal axis of the valve stem with respect to one another prior to insertion of the valve stem through the aperture, and moving the rim relative to the valve stem along a programmable path of travel during the coaxially aligning step and along the aligned axes to insert the valve stem through the aperture, the path of travel defined with a programmable robotic manipulator **54** having an arm capable of compound, multi-axial movement and having a plurality of programmed paths corresponding to a plurality of different size wheel rim and valve stem combinations to be assembled.

Therefore, Lawson et al. moves a *rim* relative to the valve stem rather than moving a **valve stem** relative to the rim.

Doan et al. teach moving a valve stem **126** relative to a rim.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Lawson et al. with the step of moving a valve stem relative to the rim, in order to reduce the weight applied to the robotic manipulator. It is noted that one of ordinary skill in the art, at the time of the invention would have found it obvious to use a robotic arm to convey a part as small as a valve stem in addition to being able to move a larger object such as a wheel as disclosed by Lawson et al. (see for example Matumoto et al. (US5206984) which uses a robotic arm to move a relatively small object.

Lawson et al. teach a machine vision system (col. 8, line 29), nut runner (col. 8, line 63), conveying valve stems in serial fashion **54**.

Lawson et al. teach rotating the table when the optical sensor is directed at the aperture rather than rotating the optical sensor about the rim. However, official notice is taken that it would have been an obvious matter of design choice to a person of ordinary skill in the art, at the time of the invention, to have rotated the optical sensor because rotating the optical sensor or the table work equally as well to align the aperture.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Jimenez whose telephone number is (571) 272-4530. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit 3726 MARC JIMENEZ
PRIMARY EXAMINER

MJ
2-5-07